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| EXAMINER |
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HARTMANN II, KENNETH R

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2619

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ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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## Office Action Summary

Application No.

10/631,352

Applicant(s)

THEOBOLD ET AL.

Examiner

Kenneth R. Hartmann

Art Unit

2619

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 December 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 14, 15 and 25-39 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 35-39 is/are allowed.
- 6) ☒ Claim(s) 14, 15 and 25-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                      |                                                                   |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____                                                          | 6) <input type="checkbox"/> Other: _____                          |

**Detailed Action**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 14, 15, 25, and 27 are rejected under 35 U.S.C. 102(e) as being anticipated by Cavin (US 7,143,320).

For claim 14, Cavin discloses an apparatus comprising a tracking device (back-off mechanism, see column 4, lines 48-51) for tracking signal strength of each wireless client's wireless link with each respective wireless access point for a plurality of wireless clients in communication with a plurality of access points (return signal strength indicators (RSSI) monitored at the AP's for each wireless client, see column 4, lines 48-58); and a control device (processor, Fig. 2) for varying the operation of at least one of the respective wireless access points and wireless clients so as to acquire maximum signal strength for each wireless client's link with each respective wireless access point (increasing or decreasing the bit error rate of at the AP depending on the presence of interference, see column (column 5, lines 5-22), wherein the control device is operable to perform at least one control action to vary the operation of at least one of the plurality of wireless access points and at least one of the plurality of wireless clients, and

wherein the at least one control action is selected from a group consisting of client admission control, varying the signal power of at least one of the plurality of wireless clients, and varying the signal power of at least one of the plurality of wireless access points (the RSSI values are typically used to adjust the power level of the transmitter, see column 4, lines 56-59).

For claim 15, Cavin discloses the apparatus as described above, wherein, the tracking device is configured to track one of a group consisting of packet error rate, channel rate, and processor rate (PER, see column 4, lines 50-51).

For claim 25, Cavin discloses the apparatus as described above, wherein the tracking device is further configured to track channel rate (data rate is tracked and adjusted based on RSSI and PER values, see column 5, lines 15-22).

For claim 27, Cavin discloses the apparatus as described above, wherein the control action is selected from a group consisting of wireless client admission control, changing operating frequency of at least one of the plurality of access points, changing operating frequency of at least one of a plurality of clients, varying the signal power of at least one of the plurality of wireless clients, changing the signal power of at least one of the plurality of access points (see column 4, lines 56-58), changing the data rate of a wireless link between at least one of the plurality of access points and at least one of the plurality of wireless clients (see column 5, lines 39-43), changing the coding of a wireless signal between at least one of the plurality of access points and at least one of the plurality of wireless clients, changing the modulation of a wireless signal between at

least one of the plurality of access points and at least one of the plurality of wireless clients, and varying packet length (see Fig. 1B).

3. Claims 28 are rejected under 35 U.S.C. 102(e) as being anticipated by Robinson et al. (US 2004/0085935), further referred to as "Robinson."

For claim 28, Robinson discloses an apparatus comprising a tracking device (part of the processing means 50, see Fig. 5 and paragraph 60, lines 2-4) configured for tracking processor performance for a plurality of access points having wireless links with a plurality of wireless clients (monitoring of the capacity of the base station, UUCBN, see paragraph 23, lines 1-17, and the access control number, UCACN, see paragraph 33, lines 1-8), a control device (processing means 50, see Fig. 5) configured for varying the operation of at least one of the plurality of access points and at least one of the plurality of clients to provide balanced access point digital processing performance, (base station and mobile terminals link up based on the available capacity of a base station, and adjust their data rate and power output depending on the available capacity as well, See paragraph 26, line 1, to paragraph 30, line 11), wherein the control device is operable to perform at least one control action to provide balanced access point digital processing performance, and wherein the at least one control action is selected from a group consisting of client admission control, varying the signal power of at least one of the plurality of wireless clients, and varying the signal power of at least one of the plurality of wireless access points (increasing the data rate, or taking on more mobile terminals, see paragraph 30, lines 1-11).

For claim 29, Robinson discloses the apparatus as described above, wherein the control action is selected from a group consisting of wireless client admission control (depending on the UCACN, certain terminals may be accepted or denied access to the base station, see paragraph 33, lines 1-8), changing operating frequency of at least one of the plurality of access points, changing operating frequency of at least one of a plurality of clients, varying the signal power of at least one of the plurality of wireless clients, changing the signal power of at least one of the plurality of access points, changing the data rate of a wireless link between at least one of the plurality of access points and at least one of the plurality of wireless clients (see paragraph 30, lines 1-2), changing the coding of a wireless signal between at least one of the plurality of access points and at least one of the plurality of wireless clients, changing the modulation of a wireless signal between at least one of the plurality of access points and at least one of the plurality of wireless clients, and varying packet length.

For claim 30, Robinson discloses the apparatus above, wherein the tracking device is further configured to track channel rate (data rate, see paragraph 31, lines 5-9).

For claim 32, Robinson discloses the apparatus above, wherein the access point digital processing performance includes adequate memory capacity (its inherent that the UCACN would involve the memory of the base station for the amount of clients to be accepted, see paragraph 33, lines 1-8).

For claim 34, Robinson discloses the apparatus above, wherein the access point digital processing performance includes adequate uplink network capacity (UUCBN, see paragraph 23, lines 10-12).

***Claim Rejections - 35 USC § 103***

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cavin (US 7,143,320) in view of Robinson et al. (US 2004/0085935), further referred to as "Robinson."

For claim 26, Cavin discloses the apparatus as described above. Cavin does not disclose the tracking device configured to track the processor performance. However, Robinson does disclose tracking the processor performance (monitoring of the capacity of the base station, UUCBN, see paragraph 23, lines 1-17, and the access control number, UCACN, see paragraph 33, lines 1-8). Therefore, it would have been obvious

to one of ordinary skill in the art to implement the tracking device of Robinson into the apparatus of Cavin. The motivation for this implementation would be so that the access points would not be overloaded by too much signal power or wireless clients.

7. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Robinson et al. (US 2004/0085935), further referred to as "Robinson" in view of Cavin (US 7,143,320).

Robinson discloses the apparatus as described above. Robinson does not disclose wherein the tracking device is further configured to track packet error rate. However, Cavin does disclose tracking packet error rate (PER, see column 4, lines 50-51). Therefore, it would have been obvious to one of ordinary skill in the art to implement the tracking device of Cavin into the apparatus of Robinson. The motivation for this implementation would be so that Robinson can determine if an overload is occurring at a base station based on incoming packet errors, rather than only the capacity.

8. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Robinson et al. (US 2004/0085935), further referred to as "Robinson."

For claim 33, Robinson discloses the apparatus described above. Robinson does not specifically disclose the access point digital processing performance to include adequate CPU processing cycles. However, it is obvious to one of ordinary skill in the art that the processor cycles would be able to be monitored since there is a capacity for access of mobile terminals. If there are too many mobile terminals, then the CPU would not be able to perform its processing cycles on time. The motivation for this would be to

ensure that the processor is able to stay up to speed, no matter what the capacity of the access point is.

***Allowable Subject Matter***

9. Claims 35-39 are allowed.

For claims 35-39, the prior art fails to teach or obviously suggest a tracking device for tracking multipath for each wireless client's wireless link, and varying a control operation such as client admission control, signal power of the wireless client, or signal power of the wireless access point in order to minimize multipath for each wireless client's wireless link.

***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Soliman (US 5,859,838) is cited to show monitoring and management in a CDMA wireless communication system.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth R. Hartmann whose telephone number is 571-270-1414. The examiner can normally be reached on Monday - Thursday, 10 - 3 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on 571-272-3126. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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